The Apparent Absence from Britain of *Thera variata* (Denis & Schiffermuller) and Related Changes in the Nomenclature

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In March 1977 DJLA received from I. Svensson (as did several other British Entomologists) a copy of his paper drawing attention to the occurrence in Northern Europe of the three species *Thera obeliscata* (Hübner), *Thera variata* (D. & S.) and a third species which he refers to as *Thera albonigrata* (Höfer).

We have since studied other publications on this group, notably Krampl (1973) who is followed by most other authors and who must be credited with discovering the distinctive character in the male antennae. Some papers consider also two other closely related continental species: *T. stragulata* (Hübn.) and *T. bellisi* Viidalepp, but we will not treat of these as there is little suggestion of their occurrence in Britain.

Examination of our British specimens of *'variata'*, showed them to be referable to Svensson's *albonigrata*, a conclusion reached independently by E. C. Pelham-Clinton in Edinburgh at about the same time.

We have examined all the specimens of *'variata'* in the British Museum (Natural History) as well as those in many private collections from all over the British Isles. In every case the same antennal character indicates this third species to be the one present in Britain rather than the true *variata.*

Because of the close relationship between the species of this complex and their extensive variation, the nomenclature has become confused. We have therefore made type designations where it seemed desirable in order to stabilize the names.

Nomenclature

Many forms of the species in this group have been named and they are listed by Prout (1938). However, the International Code of Zoological Nomenclature, Article 1, makes it clear that infrasubspecific names have no standing. Only if a taxon is described as a species, a subspecies or a distinct geographical race is it an available name.

Höfer (1920) originally described *albonigrata* simply as an *ab.* of *T. variata,* and as such the name was not available until given distinct specific status by Gornik (1943). Thus, Dufay (1978) correctly points out the name as *albonigrata* (Gornik, 1943). Krampl (1979) attributes authorship to Osthelder (1929), but it is clear from the context that Osthelder uses *var. albonigrata* in a purely aberrational sense.

H. J. Turner (1925) described *britannica* as a 'new race', and as such it constitutes an available name, the earliest we

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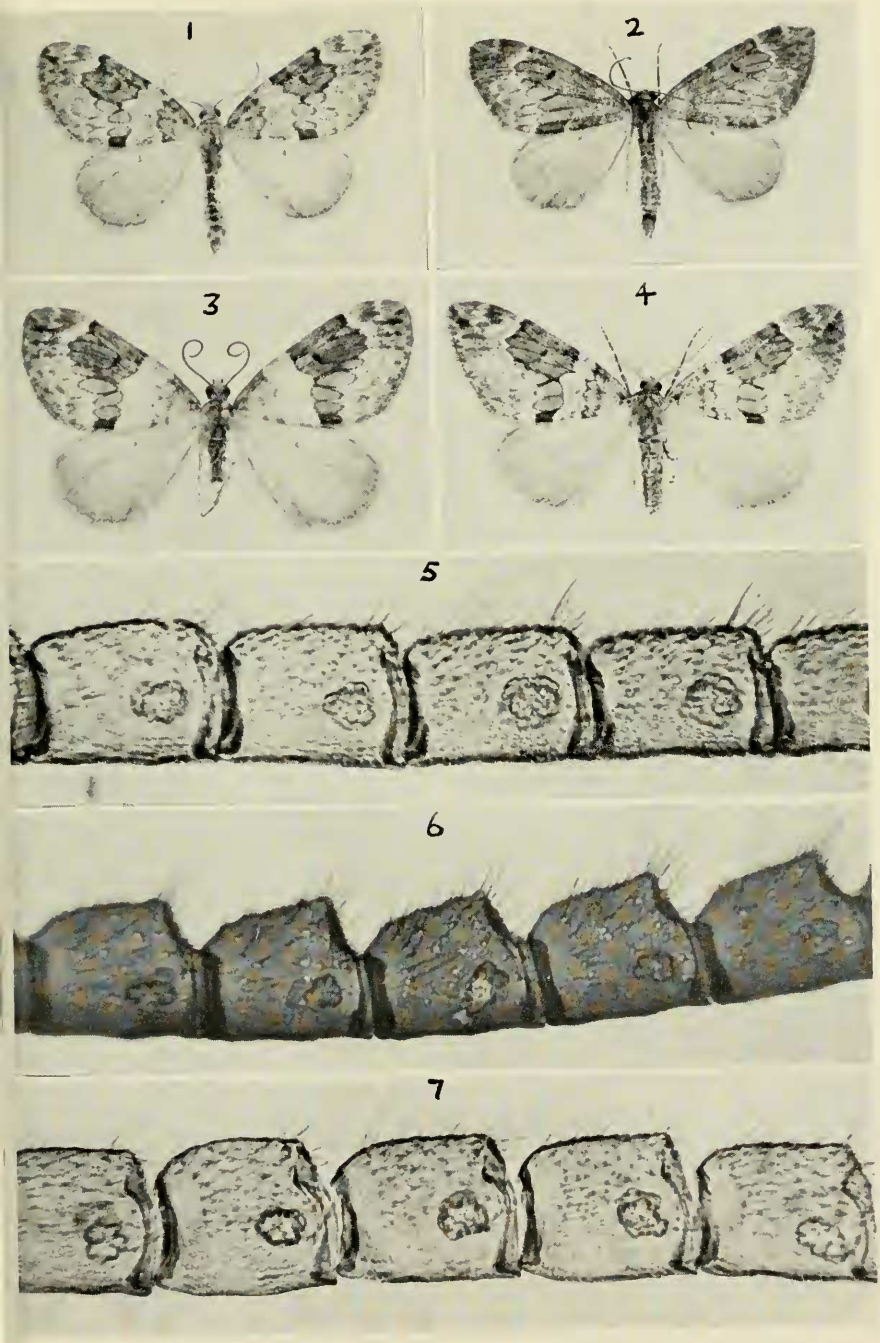
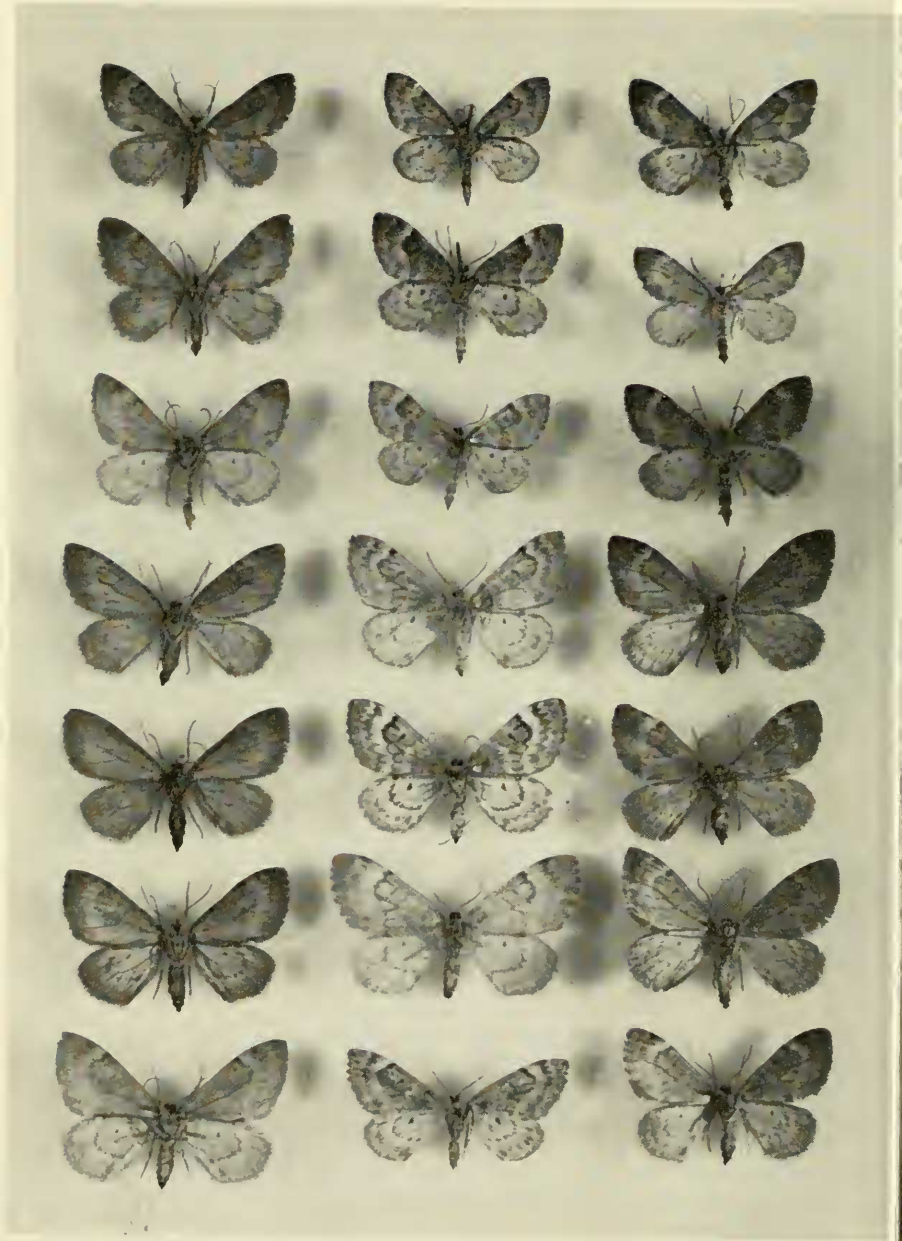


Fig. 1. *T. variata* neotype. Fig. 2. *T. britannica* lectotype. Fig. 3. *T. britannica* f. *albonigrata* (Vienna dist.). Fig. 4. *T. britannica*, usual form in Britain. Figs. 5-7. Middle segments of antennae (enlarged): (5). *T. variata*. (6) *T. britannica*. (7). *T. obeliscata*.



UNDERSIDES OF *THERA* SPECIES
1st row: *T. obeliscata.* 2nd row: *T. variata*
3rd row: *T. britannica.*

have been able to trace. Since we have found this race to be conspecific with *albonigrata*, a conclusion shared by Dr. Krampl, *britannica* Turner by the law of priority is the name which should be used for this species, and *albonigrata* Gornik becomes a junior subjective synonym.

We have examined material of all forms whose names might qualify as available, and have found them all to be either later than *britannica* or else referrable to another species. The single exception is *diniensis* Heinrich; Heinrich (1923) describes *var. diniensis* of *Larentia variata* from Digne as follows "Wurzel — und Saumfeld stark weisslich übergossen, sonst wie *obeliscata* Hb." which may be translated "basal and distal areas strongly suffused whitish, otherwise as *obeliscata* Hb." This is rather inconclusive, and as attempts to trace Heinrich's collection have proved unsuccessful, we accept the last published opinion, that of Prout (1938), that it is a form of *obeliscata* Hübn.

Type Designations

It is clear from the confusion surrounding this group of species that exceptional circumstances exist which warrant the designation of a neotype of *variata* D. & S.. The conditions of ICZN Article 75(c) are fulfilled as follows:

(1) The differences between the species are described hereunder as well as in the references cited.

(2) A specimen (♂) (Plt. XII, fig. 1) bearing a red-ringed neotype label and with a data label inscribed 'C. Höfer Austr. inf. Klosterneuberg. Haschb. ex ovo 23.5.19' is hereby designated the neotype of *Geometra variata* [Denis & Schiffermüller], 1775.

(3) The collections of Denis & Schiffermüller were destroyed by fire as described by Horn & Kahle (1936: 243).

(4) The specimen designated agrees with D. & S.'s original description and may be assumed to correspond with specimens in their series.

(5) The neotype is from the environs of Vienna where Denis & Schiffermüller did most of their collecting.

(6) The specimen is deposited in the Vienna Natural History Museum.

There are many specimens of *Thera britannica* from the Turner collection in the British Museum (Natural History), but only one ♂ dates from 1924 and may be assumed to belong to the original series described by Turner. This specimen (Plt. XII, fig. 2) is hereby designated as the lectotype and it bears the following labels: 1, *'Thera britannica* Turner, lectotype designated D. Agassiz, 1978'. 2, a purple-ringed lectotype label, 3, 'Burrows Coll. Pres. by H. J. Turner, B.M. 1949-586' and 4, 'Southampton 7-v-1924 W. Fassnidge'.

Because of the great variability of the species of *Thera* under consideration it is not easy to give constant distinct characters by which they may be separated, although the markings of the forewings will often give a clue.

The best structure from which determination can be made is undoubtedly the shape and size of the middle segments of the male antennae, though even here it is important that they are looked at from the right angle. They can be distinguished with the aid of a high powered hand lens, better still with a microscope.

Other differences do exist and they are given with great accuracy by Dufay (1978) and Krampl (1973). These comprise precise measurements in the genitalia as well as particular features in the wing pattern, colour and size. Most of the differences are of a comparative nature and are therefore not very helpful in determining an isolated specimen, although they are adequate to prove the distinctiveness of the species; for example the valves of the ♂ genitalia of *variata* are longer and less indented on the costa than *britannica.*

The life histories also show differences but again there is sufficient variation of habit for this alone to be unreliable even the eggs have been shown by Krampl & Novák (1979) to be different dimensions yet there is still some overlap.

As a result we have not gone into great detail to describe differences which may elude the average amateur, students with more sophisticated techniques available to them are referred to the papers cited. We merely mention briefly the chief differences and figure the ♂ antennae and the undersides which show the most striking differences.

Thera variata Denis & Schiffermüller

Middle segments of ♂ antennae uniformly cylindrical, their length much greater than their width (Plt. XII, fig. 5). Wingspan on average slightly smaller than *britannica,* average ♂ 23 mm. ♀ 27 mm., forewings with the subterminal line more strongly dentate, generally more variegated and particularly noticeable is the greater contrast on the underside.

The principal foodplant is Spruce (*Picea abies*), but the larva is said to feed also on other conifers. The larva is described by Gornik as 'grey-green and matt with white lateral stripes, like the underside of fir leaves'.

T. variata is widely distributed in Europe and Asia, but because many records may refer to *britannica* the exact range is not yet clear. It is certainly well known in central Europe, it has been recorded from Denmark and Sweden, and also from parts of France; it is interesting to note that Dufay finds it absent from the region of Lyon and it may be that *britannica* is the commoner species in North-West France. It is most remarkable that we have not been able to trace a single specimen from the British Isles, the reason for this must remain a matter for conjecture; with the increasing amount of Spruce afforestation it would be wise for British entomologists to remain vigilant in case the species should appear.

Thera britannica Turner (= *albonigrata* Gornik)

Middle segments of male antennae strongly indented,